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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,621

01/24/2007

Erich Bott

BOTT-4

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HENRY M FEIEREISEN, LLC

HENRY M FEIEREISEN

708 THIRD AVENUE

SUITE 1501

NEW YORK, NY 10017

EXAMINER

DESAI, NAISHADH N

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/561,621	<b>Applicant(s)</b> BOTT ET AL.	
	<b>Examiner</b> NAISHADH N. DESAI	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 25-35 and 39-48 is/are pending in the application.
- 4a) Of the above claim(s) 44-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-35 and 39-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/24/2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/03/2009</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/03/09 has been entered.

### ***Election/Restrictions***

2. Newly submitted amended claim 44 (method of making) directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Examiner would like to remind applicant that applicant elected the apparatus claims 25-43 WITHOUT traverse in accordance with an reply via telephone to examiner on 5/30/2008 (also indicated in examiner's correspondence dated 6/11/2008 to applicant). Applicant was advised (in examiner's correspondence dated 6/11/2008) to include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01 in response to office action.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 44-48 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: conductor tracks as claimed claim 25. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Examiner did find the "conductor tracks" referred to in applicant's specification (in paragraph 52) as element 10. However examiner fails to find element 10 clearly indicated / distinguished in any of applicant's drawings.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 25-27,29-32,34,35,39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al (US 5900687) in view of De Filippis et al (US 6924570).

4. Regarding claim 25, Kondo et al teaches:

An electric machine comprising (abstract):

a rotor (abstract),

a stator (Col 1 l 15) having at least one winding system constructed of a plurality of coils (Fig 1,2), each coil having winding strands with ends (Fig 1,2),

at least one circuit support disposed on an end face of the stator (Fig 1,7) and formed as a circuit board (Fig 2,7) having formed thereon channels (Fig 2,7a,b) with conductor tracks (Fig 2,3a,4a,5a and Col 3 ll 1-3) interconnecting the winding strands in the channels in a predetermined wiring pattern (Fig 2,7a,b and Col 1 ll 23-25) and webs (Fig 2,space between elements 7a and 7b) arranged between the conductor tracks (Fig 2,3a,4a,5a,7a,7b and Col 3 ll 7-10) for separating electrical potentials and lengthening leakage paths between different phases (Fig 2,7 and Col 3 ll 7-10).

Kondo et al do not teach “a cover having webs meshing with corresponding webs of the at least one circuit support and holding the winding strands down in the channels and maintaining the leakage paths between the different phases” or that “the at least one circuit support further comprising snap-on connections, engaging with the stator and securing the at least one circuit support on the stator”.

De Filippis et al (Fig 3,15) teaches a cover having webs meshing with corresponding webs of the at least one circuit support (Fig 3,11) and holding the winding strands down in the channels and maintaining the leakage paths between the different phases (Fig 1). De Filippis et al (Fig 3,15) also teaches “at least one circuit support (Fig 3,11) further comprising snap-on connections (Fig 3,22-26 and 50), engaging with the stator and securing the at least one circuit support on the stator (Col 3 ll 28-38)”.

Kondo et al and De Filippis et al discloses the claimed invention except for the shape or size of the cover to have webs meshing with corresponding webs of the at least one circuit support. It would have been an obvious matter of design choice to make the cover have webs meshing with corresponding webs of the at least one circuit support, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955). The motivation to do so would be that it would provide one with a stator structure wherein the interconnection of the coils is improved (Col 1 ll 64-65 of De Filippis et al).

In regards to claim 25 above, the method of making limitations are not germane to the patentability of the apparatus and have not been given patentable weight. The patentability of the product does not depend on its method of production. If the product in the product by process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process". In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966(Fed. Cir. 1985). In this instance the case it is obvious that the circuit support can be formed as a printed circuit board, the conductors can be printed, as Kondo et al teaches the use of printing to make circuits and wiring (Col 1 ll 23-25). It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate the teachings of Kondo et al's admitted prior art with the first embodiment to utilize the technique of printing to print the conductors (as taught in their first embodiment) on the circuit board to simplify manufacturing of the device.

5. Regarding claim 26, Kondo et al (Figs 1-6) teaches that the stator comprises a plurality of teeth and the winding system comprises toothed coils, and wherein each of the toothed coils surrounds a corresponding tooth of the stator.

6. Regarding claim 27, Kondo et al (Figs 1 and 2) teaches a support positioned on a corresponding tooth, with each of the toothed coils being arranged on a corresponding support.

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7. Regarding claim 29, Kondo et al (abstract and Figs 1 and 2) teaches that the at least one circuit support further includes functional elements for attaching, contacting, and routing wires of current-carrying elements.

8. Regarding claim 30, Kondo et al (Fig 1,7 and 2,7) teaches that the circuit support is formed as a single piece.

9. Regarding claim 31:

The electric machine of claim 29, wherein the circuit support is formed of several pieces adapted for insertion of the functional elements.

Kondo et al discloses the claimed invention except for mentioning that the circuit support is formed of several pieces instead of an integrated unit. It would have been obvious to one having ordinary skills in the art at the time the invention was made to make the integrated circuit support of several pieces instead, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

The motivation to do so would be that it would reduce complexity during assemblage and cost of parts. It would also aid maintenance and repair of parts by only replacing the malfunctioning pieces versus the entire integrated circuit support.

It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.



10. Regarding claim 32, Kondo et al (abstract and Figs 1-2) teaches that the circuit support provides interconnectability in one or several wiring planes.

11. Regarding claim 34, De Filippis et al (Col 3 ll 28-31) teaches the circuit support is produced as an injection molded plastic part.

12. Regarding claim 35:

The electric machine of claim 25, wherein the circuit support is produced in MID (Molded Interconnected Device) technology or lead-frame technology.

In regards to claim 35, this limitation is a product-by process limitation. The method of forming / making the device is not germane to the issue of patentability of the device itself. This does not structurally distinguish the claim over the prior art. Therefore the method of forming / making the device has not been given patentable weight.

13. Regarding claim 39, De Filippis et al (Col 4 ll 37-39) teaches that the cover includes means for attaching the winding strands.

14. Regarding claim 41, Kondo et al (Fig 2, elements 3-7) teaches that the circuit support is configured to accommodate different predetermined wiring patterns.

Claims 28,42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al and De Filippis et al as applied to claim 25 above, further in view of Morreale (US 4039875)

15. Regarding claim 28, Morreale (Col 2 ll 50-52) teaches that the stator comprises a sheet metal laminate, and wherein the at least one circuit support is positioned on at least several of the supports or on at least several toothed coils or on a sheet metal laminate of the stator.

Kondo et al De Filippis et al has been discussed above regarding claim 1, but fail to teach that the stator core is made of laminated steel sheets. Morreale (Col 2 ll 50-52 and Figs 2 and 6) teaches that the stator comprises a sheet metal laminate. It would have been obvious to one having ordinary skills in the art at the time the invention was made to make the stator of laminated steel sheets. The motivation to do so is that it would improve the efficiency of the device and ease of maintenance. It is also well known in the art to make stators of laminated steel sheets.

16. Regarding claim 42, Morreale (Fig 5,26 and Col 3 ll 29-35) teaches that the support of the toothed coils includes at least one contact support for contacting the ends of the winding strands.

17. Regarding claim 43, Morreale (Fig 5,26 and Col 3 ll 29-35) teaches that the at least one contact support is attached to the support of the toothed coils.

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Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al and De Filippis et al as applied to claim 25 above, further in view of Takano et al (US 6566779).

18. Regarding claim 33:

The electric machine of claim 25, wherein the circuit support comprises one or more temperature sensors.

Kondo et al De Filippis et al has been discussed above regarding claim 25, but fail to teach the use of temperature sensors. Takano et al teaches the use of temperature sensors (Col 6 ll 13-16). It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the device of Kondo et al and De Filippis et al to use the temperature sensors as disclosed by Takano et al. It is well known in the art to use temperature sensors to monitor armature assemblies in order to avoid over heating and to ensure that the device is operating at optimal efficiency. The motivation to do so would be that it would allow one to monitor and detect the temperature of the stator armature assembly (Col 6 ll 15-16 of Takano et al).

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al and De Filippis et al as applied to claim 25 above, further in view of Lin (US 6100614).

19. Regarding claim 40:

The electric machine of claim 38, wherein the cover includes a strain relief for power supply lines.

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Kondo et al and De Filippis et al has been discussed above regarding claim 25, but fail to teach the a strain relief element on the cover. Lin teaches the use of a strain relief clip (abstract and Fig 4). It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the device of Kondo et al and De Filippis et al with the teachings of Lin to use the strain relief element on the cover. The motivation to do so would be that it would relieve stress or strain on the wires (abstract of Lin).

### ***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 for details.

### ***Response to Arguments***

21. Applicant's arguments with respect to claims 25-43 have been considered but are moot in view of the new ground(s) of rejection.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAISHADH N. DESAI whose telephone number is (571)270-3038. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached on (571) 272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen Leung/  
Supervisory Patent Examiner, Art Unit 2834

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/Naishadh N Desai/  
Examiner, Art Unit 2834